



TOWN OF PLYMOUTH

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ADDENDUM 1

TO: Potential Bidders

FROM: Pamela D. Hagler, Procurement Officer

DATE: March 16, 2015

RE: 21515, Samoset Street Sewer System Expansion

This addendum, consisting of 21 pages, modifies the original bid document dated February 26, 2015. Please acknowledge receipt of this addendum in the space provided on the bid form. Failure to do so may subject the bidder to disqualification.

THE FOLLOWING CHANGES AND/OR ADDITIONS/DELETIONS MODIFIES THE BID DOCUMENT

- **The bid due date has been postponed from 2:00 p.m., Thursday, March 19, 2015, to 11:00 a.m., Tuesday, March 24, 2015.**
1. INVITATION, MASSDOT PREQUALIFICATION
 - A. Page 4, prequalification by the Massachusetts Department of Transportation is not required for this project.
 2. DOCUMENT 01030, SPECIAL REQUIREMENTS
 - A. Page 01030-8, Article 1.11, Paragraph A, delete "Fruit Street" and replace with "131 Camelot Drive".
 3. SECTION 01025, MEASUREMENT AND PAYMENT
 - A. See below and attached for Grissom Road Pump Chamber/wetwell description and a revised Section 01025 that includes Item 22.

Grissom Road Pump Chamber/Wetwell

1. The precast reinforced concrete pump chamber/wetwell shall have inside dimensions of 6'-0" by 8'-0" and inside depth of 8'-0" and shall conform to the applicable requirements of ASTM C478. Wire fabric for reinforcement shall conform to the requirements of ASTM A185 and steel reinforcement shall conform to the requirements of ASTM A615 Grade 40. The precast reinforced concrete structure shall be designed against buoyancy for a hydrostatic head equal to the depth of the structures and shall be capable of withstanding an H-20 truck load.
2. All interior surfaces (walls, floors and ceilings) of the precast reinforced concrete pump chamber/wetwell shall be coated with a 100 percent Solids Modified Amine Epoxy as specified under DIVISION 9 - FINISHES of these specifications.

Entrance Hatch

1. The pump chamber/wetwell shall have a 3'-0" by 5'-0" entrance hatch. The manufacturer shall guarantee proper operation and against defects in material or workmanship for a period of five years.
2. The hatch shall be of aluminum construction as manufactured by Syracuse Casting Sales Corp., Cicero, New York, Bilco Company or equal. The hatch covers shall be a double leaf, watertight self-draining type. Each leaf shall be of 1/4-inch thick aluminum diamond pattern plate capable of withstanding an H-20 truck load. Channel frame shall be of 1/4-inch thick aluminum with anchor flange around the perimeter. Each door leaf shall be equipped with a minimum of two stainless steel hinges with stainless steel pins, spring operators to allow easy operation, and an automatic hold-open arm with release handle. Hatch shall be provided with recessed padlock clasp and padlock as manufactured by Corbin (No. 2863, 1/4W) or equal by Schlage (No. 912). A 1-inch drainage coupling shall be located in the front right corner of the channel frame. Wetwell hatch drain shall discharge directly into pump station wetwell. Hardware shall be stainless steel and factory finish shall be mill finish with bituminous coating applied to exterior of frame. Hatch padlock and keyset shall be coordinated with the Owner.
3. Provide a hinged safety grate with the entrance hatch.
 - a. Grate shall have openings 5-inch by 5-inch, shall have a permanent hinging system which will lock the gate in the 90 degree position once opened, shall have an opening arm with a vinyl grip handle which will allow opening of the grate while providing the grate as a barrier between the

operator and the opening, and shall be painted with a safety orange paint.

- b. Safety grate shall be constructed of 6061-T6 aluminum with a minimum ultimate strength of 38,000 psi and minimum yield strength of 35,000 psi as per A.S.T.M. B221. Grate shall withstand live loads of 300 pounds per square foot with a deflection not to exceed 1/150th of the opening. Welding shall be in accordance with ANSI/AWS D1.2-90 Structural Welding Code for Aluminum. Hinged safety gate shall be as manufactured by Syracuse Casting Sales Corp., Cicero, New York, or equal. Size shall be coordinated between grate and hatch manufacturer.

4. SECTION 11300, SUBMERSIBLE WASTEWATER PUMPING STATION

- A. Page 11300-5, Article 2.01 PACKAGE PUMP STATIONS, after Paragraph D.6, insert the following:

"E. Electrical/Generator Building

1. Electrical/Generator Building shall be a factory precast building, preassembled with all architectural, electrical, HVAC, plumbing, and mechanical related work associated with the building.
2. Preassembled precast building shall be manufactured, assembled, and tested at the factory. Building is to be delivered to the job site as one complete unit. Assembly or custom build out at the site will not be allowed.
3. Manufacturer's complete shop drawings shall be submitted within one month after execution of the contract.
4. Manufacturers
 - a. United Concrete Products
 - b. Shea Concrete Products
 - c. Oldcastle Precast"

5. SECTION 11396, GAS-ENGINE DRIVEN GENERATOR SET

- B. Page 11396-19, ATTACHMENT A, delete ATTACHMENT A in its entirety, insert the attached revised ATTACHMENT A.

QUESTIONS:

Q1: Is there a separate bid line item for MassDOT pavement?

A1: MassDOT paving quantities are included in the Samoset Street line items. The pavement requirements for Samoset Street and MassDOT are the same.

Specification Section 02630-2 Ductile Iron Force Main

Q2: Please advise if you are requiring "Mechanical Joint Pipe", or would a typical Push-On (Tyton) Joint Pipe be acceptable?

A2: A Push-On (Tyton) type pipe joint is acceptable.

Q3: There is no detail for the depressed concrete sidewalk shown on sheet C-101 and the limits of the sidewalk are not clear.

A3: A concrete sidewalk detail is shown on sheet C-504 and a sidewalk through driveway is shown on C-503. The extent of the sidewalk replacement in this area will be the limit of disturbance for the driveway entrance. An estimated extent of the sidewalk is shown on C-101 by a darker line just beyond the extent of the proposed driveway entrance.

Q4: Please clarify the height of the chain link fence to be provided for the pump station. Drawing C-101 plan view states 6' high chain link fence vs. Drawing C-503 detail shows 8' high chain link fence.

A4: The fence should be 8' as shown in detail on Drawing C-503.

Q5: The specification for this project shows an 85 KW generator but on Page 11396-19 Attachment A, there is a list of loads to be powered by the generator. If all three loads are to run at the same time (but start one at a time) the generator needed, is almost twice the size of that which is specified. Can you please find out if P-1 and P-2 VFD's will run ever at the same time? If only one will run the specified generator is sufficient.

A5: See the Attachment A, revised generator specification.

END OF ADDENDUM 1

ATTACHMENT A

TO SECTION 11396

Loads to be powered up by the engine-generator for engine generator load calculation. The Generator shall be capable of picking up the loads in order shown when operated manually.			
SWBD-1			
Equipment	Total Quantity	Quantity Operating	HP/AMPS/kVA/kW
Miscellaneous	1	1	15 kVA
P-1	1	1	60 HP* (68A/480 VAC/3PH)
P-2	1	0	60 HP* (68A/480 VAC/3PH)
* Motor is powered by variable frequency drive (VFD).			

ATTACHMENT B

TO SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

- A. The purpose of this section is to define the basis of measurement and payment for each of the unit price or lump sum items listed in BID FORM. If no quantity or bid item appears in BID FORM for any of the following described items, no Work of that description is anticipated on the project.
- B. The Contractor shall become acquainted with all Work associated with each Payment Item and shall have no claim for additional compensation due to unfamiliarity with the Work required to complete each Item in accordance with the Contract Documents.
- C. No payment will be made for any item of Work until all documentation required by the Contract Documents has been reviewed and approved by the Engineer.
- D. No payment will be made for additional materials that are not installed on the Project.
- E. The Owner reserves the right to withhold the fair market value for work not completed. In addition to the retainage on work completed as described in DOCUMENT 00855, SPECIAL CONDITIONS, COMMONWEALTH OF MASSACHUSETTS. Unbalanced bid items will specifically be subject to review and to this potential withholding from periodic payment applications.

1.02 PAYMENT ITEMS

Basis of Award

<u>Item</u>	<u>Description</u>
1.	Mobilization/Demobilization
2.	Sewer Pipelines and Associated Fittings
3.	Precast Concrete Manholes and Structures
4.	Manhole Frames and Covers
5.	Manhole Drop Connections
6.	Chimneys
7.	Miscellaneous Cement Concrete
8.	Rock and/or Boulder Excavation

9. Replacement of Unsuitable Material
10. Experimental Excavation
11. Fill for Embankments – Not Used
12. Sheeting and/or Shoring Ordered Left in Place – Not Used
13. Soil Compaction Tests
14. Road Base Course Material
15. Pavement Restoration
16. Remove and Relay or Replace Existing Utilities
17. Uniformed Traffic Police Officers
18. Engineer's Field Office
19. Environmental Protection
20. Dewatering
21. Samoset Street Sewer System Expansion Pump Station
22. Grissom Road Pump Chamber

1.03 BASIS OF MEASUREMENT AND PAYMENT

ITEM 1. MOBILIZATION/DEMobilIZATION

- A. General. The price bid under this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include transporting, mobilization, demobilization, utility connection fees, permits, licenses, bonds, insurance and all other incidental Work relative thereto.
- B. Measurement. Measurement for mobilization/demobilization shall be made based on the lump sum amount bid as approved by the Engineer.
- C. Payment. Payment for mobilization/demobilization listed in BID FORM shall be made at the lump sum price bid under this Bid Item. The amount of this lump sum shall not exceed five (5) percent of the Contract amount, excluding Item 1, and no payment shall be made in excess of this amount. An amount of seventy-five (75) percent of the amount bid under Item 1 (exclusive of normal Contract retainage) will be made when the Contractor has mobilized to the Project site(s) and is ready to start construction. The remaining twenty-five (25) percent (exclusive of normal Contract retainage) will be made following demobilization from the Project site(s).

ITEM 2. SEWER PIPELINES AND ASSOCIATED FITTINGS

- A. General. The prices bid under each division of this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as

specified, which shall include: handling and dispersal of materials; clearing and grubbing; saw cutting of existing bituminous and cement concrete or reinforced cement concrete pavement; excavation (excluding that which is specified to be paid for under a separate Bid Item); backfill above trench grade including all bedding materials (excluding material used to replace unsuitable material, controlled density fill and road base course material); removal and legal disposal of all existing utility lines not being relaid (including pipes, services, manholes and appurtenances); removal and legal disposal of existing utility materials (as required); compacting trenches (excluding soil compaction tests specified to be paid for separately); sheeting and shoring not ordered left in place; loaming and seeding; landscaping; curbing replacement; removing and resetting property markers, signs and mail boxes; connections to existing pipeline(s) and services; dust control including mechanical sweeping; all permanent and temporary fittings, caps, plugs, restraints and the like; two-way sewer lateral cleanout; flushing and testing; dewatering of trenches; polyethylene encasement; daily cleanup; restoration of all areas disturbed by the Contractor's operations; all Work as specified in DIVISION 1 – GENERAL REQUIREMENTS (excluding Environmental Protection specified to be paid for under a separate Bid Item); and all other incidental Work relative thereto.

B. Measurement. Measurement for furnishing and installing pipelines and associated fittings shall be as follows:

1. The length of pipe and fittings (pipeline), to be paid for shall be the horizontal measured length of pipeline in place from centerline of manhole to centerline of manhole. Measurement shall be by the linear foot with no deductions made for manholes, fittings or valves. The measurement for depth of gravity sewers shall be made vertically from the existing ground surface above the pipeline to the invert of the sewer.
2. The length of pipe and fittings (force main or low pressure sewer) to be paid for shall be the measured length of pipeline in place. Measurement shall be by the linear foot with no deductions made for fittings or valves.
3. Measurement for service connections shall be by the linear foot with no deductions made for fittings or valves.
 - a. Measurement for sewer service connections shall be the horizontal measured length of pipeline in place from the face of the wye, tee or chimney to the terminus of the service pipeline.
 - c. For connections to existing services, measurement shall be as stated above with a minimum payment of five (5) linear feet.
4. Measurement for wyes, tees, blow offs, air vents (manual or automatic), service connections and the like shall be per each installation, as approved by the Engineer.

C. Payment. Payment for furnishing and installing pipelines and associated fittings of the various types, diameters and depths listed in BID FORM, shall be made at the unit prices bid under the applicable divisions of this Bid Item.

1. Only seventy-five (75) percent of the price bid per linear foot of pipeline shall be paid for upon its installation, the balance shall be withheld until such time as pipeline(s) have been successfully flushed and tested (as required), accepted by the Owner for incorporation into

the existing pipeline system and the site(s) has been fully restored. This percentage is exclusive of normal Contract retainage.

2. An additional five (5) percent shall be withheld until such time as the complete system has been cleaned and televised with records accepted by the Owner. This percentage is exclusive of normal Contract retainage.
3. The Contractor shall provide water for flushing and testing (as applicable) for each section of pipeline (transmission main and force main only) installed. Water utilizing the Owner's water system may be available, however the Owner does not guarantee that its water supply will be available at any time during the duration of the Project. If available, water required for testing, puddling and/or jetting of trenches shall be provided by the Owner at no cost to the Contractor. All water shall be metered and the use of backflow prevention device(s) shall be required as approved by the Owner.
4. Payment for furnishing and installing fittings, restraints, solid sleeves, flexible couplings, transition couplings and the like shall be made under and included in the prices bid per linear foot.
5. Payment for service connections including fittings and/or valves shall be made at the unit price bid per linear foot.
6. Payment for sewer service wyes or tees shall be made at the unit price bid for each approved installation. Payment will be made without regard to size.

ITEM 3. PRECAST CONCRETE MANHOLES AND STRUCTURES

- A. General. The prices bid under each division of this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include excavation, installation, steel reinforced copolymer polypropylene plastic steps, lifting rings, sealing materials in horizontal joints, pipe penetrations, dampproofing, invert, electrical and mechanical equipment, valves and fittings as specified and/or shown on the Contract Drawings, backfill, mancatchers on manholes over twenty (20) feet in depth, removal and legal disposal of existing structures to be replaced, and all other incidental Work relative thereto.
- B. Measurement. Measurement for furnishing and installing precast concrete manholes shall be as follows:
 1. For sewer and drain manholes, measurement for depth shall be from the top of frame to the lowest invert in the manhole, as approved by the Engineer.
 2. For air release and flushing/drain manholes, measurement shall be per each installation, regardless of depth, as approved by the Engineer.
 3. For sump drain manholes and catch basins, measurement shall be from the top of frame to the lowest invert or sump in the structure, as approved by the Engineer.
- C. Payment. Payment for furnishing and installing precast concrete manholes listed in BID FORM shall be made at the unit prices bid under the applicable divisions of this Bid Item.

1. Payment for air vacuum and air release valve and/or flushing drain manholes shall be per each approved installation.
2. Only seventy-five (75) percent of the price bid for each manhole shall be paid for upon its installation, the balance shall be withheld until such time as the manhole has been successfully tested and accepted by the Owner. This percentage is exclusive of normal Contract retainage.
3. An additional ten (10) percent shall be withheld until such time as the invert, manhole steps, pig catchers, and mancatchers have been installed and accepted by the Owner. This percentage is exclusive of normal Contract retainage.
4. An additional twenty (20) percent shall be withheld until such time as the mechanical equipment, valves and fittings in the air release and/or drain manholes have been installed and accepted by the Owner. This percentage is exclusive of normal Contract retainage.

ITEM 4. MANHOLE FRAMES AND COVERS

- A. General. The prices bid under each division of Item 4 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include setting frames and covers to existing grade initially and resetting frames and covers to final grade prior to final pavement restoration and all other incidental Work relative thereto.
- B. Measurement. Measurement for furnishing and installing manhole frames and covers shall be per each installation as approved by the Engineer.
- C. Payment. Payment for furnishing and installing manhole frames and covers of the various types and sizes listed in BID FORM shall be made at the unit prices bid per each under the applicable divisions of Item 4.

ITEM 5. MANHOLE DROP CONNECTIONS

- A. General. The prices bid under Item 5 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include excavation, assembly, drop piping, fittings, concrete encasement, hardware, backfill, increasing of inside diameter of the precast concrete manhole to the next nominal size, and all other incidental Work relative thereto.
- B. Measurement. Measurement for furnishing and installing interior manhole drop connections shall be from the invert of the manhole to the top of the drop connection.
- C. Payment. Payment for furnishing and installing interior manhole drop connections listed in BID FORM shall be made at the unit price bid per vertical foot under Item 5.

ITEM 6. CHIMNEYS

- A. General. The price bid under Item 6 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include excavation, vertical piping, wye fittings, caps, concrete encasement, and all other incidental Work relative thereto.

- B. Measurement. Measurement for chimneys shall be from the top of the chimney to the top of the wye fitting for each installation as approved by the Engineer.
- C. Payment. Payment for chimneys listed in BID FORM shall be made at the unit price bid under Item 6.

ITEM 7. MISCELLANEOUS CEMENT CONCRETE

- A. General. The price bid under this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, and any other incidental Work relative thereto.
- B. Measurement. Measurement of miscellaneous cement concrete shall be the actual cubic yardage placed as approved by the Engineer.
- C. Payment. Payment for miscellaneous cement concrete listed in BID FORM shall be made at the unit price bid per cubic yard under this Bid Item.
 - 1. Payment for concrete used for manhole bases, joints and inverts, for setting frames and covers, for manhole drop connections and for chimneys shall be included as specified under the applicable Bid Item.

ITEM 8. ROCK AND/OR BOULDER EXCAVATION

- A. General. The unit price for rock and/or boulder excavation under Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified which shall include excavation, drilling and blasting; drilling and splitting; use of hydraulic/pneumatic hammers, pre-blast survey(s), permit(s) and license(s), vibration monitoring, removal and legal disposal of rock and/or boulders, furnishing and placing replacement material, backfilling and compaction, and any other incidental Work relative thereto.
- B. Measurement. Measurement of rock and/or boulder excavation shall be made based on the volume removed and replaced as approved by the Engineer computed as follows:
 - 1. Only boulders greater than one (1) cubic yard in volume, defined by the Engineer as removable only by blasting, shall be measured and paid for under this Bid Item. Measurement shall be based on the length, width and depth of boulders excavated within the trench limits.
 - 2. Rock in pipe trenches shall be measured from its surface to a point six (6) inches below the invert of the pipe and as follows:
 - a. For pipe twenty-four (24) inches or less in diameter a width of five (5) feet for depths twelve (12) feet or less and a width of seven (7) feet for depths greater than twelve (12) feet.
 - b. For pipe greater than twenty-four (24) inches in diameter a width of three (3) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of five (5) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.

3. Rock or boulders encountered in other excavations, which are to be paid for separately, shall be measured from its surface to a point six (6) inches below the base of structure and to a width of one (1) foot outside the face of the structure.
 4. Where more than one (1) pipe is installed in the same trench, payment shall be made on the basis of a common trench with the maximum trench width of seven (7) feet.
- C. Payment. Payment for rock and/or boulder excavation listed in BID FORM shall be made at the unit price bid per cubic yard under this Bid Item.
1. No additional payment will be made for frost removal or for any other materials encountered in the excavations, no matter how stiff or compact of consistency, even if blasting is required for removal. Soft or disintegrated rock that can be removed without the use of explosives shall not be paid for under this Bid Item.
 2. No additional payment will be made for rock and/or boulder excavation where existing utilities are removed and relaid to facilitate the Work within the trench limits defined hereinbefore.
 3. Masonry or concrete structures encountered during the course of constructing the Work, which require blasting for removal, shall be paid for subject to the limits and conditions described herein.
 4. No payment will be made for excavation of rock and/or boulders beyond the specified limits.

The unit price for rock and/or boulder excavation shall be a minimum of \$65 per cubic yard which shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified which shall include excavation, drilling and blasting; drilling and splitting; use of hydraulic/pneumatic hammers, pre-blast survey(s), permit(s) and license(s), vibration monitoring, removal and legal disposal of rock and/or boulders, furnishing and placing replacement material, backfilling and compaction, and any other incidental Work relative thereto.

ITEM 9. REPLACEMENT OF UNSUITABLE MATERIAL

- A. General. The prices bid under each division of this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified which shall include excavation, sheeting or shoring not ordered left in place, dewatering, removal and legal disposal of unsuitable materials, filter cloth, furnishing and placing replacement materials, transportation, backfilling, compaction and any other incidental Work relative thereto.
- B. Measurement. Measurement for replacement of unsuitable material above and below trench grade and/or subgrade shall be made based on the volume removed and replaced as approved by the Engineer and as follows:
 1. Unsuitable material below trench grade shall be measured from a point six (6) inches below the invert of pipe to the bottom of the excavation and as follows:
 - a. For pipe twenty-four (24) inches or less in diameter a width of five (5) feet for depths twelve (12) feet or less and a width of seven (7) feet for depths greater than twelve (12) feet.

- b. For pipe greater than twenty-four (24) inches in diameter a width of three (3) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of five (5) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.
 2. Unsuitable material above trench grade shall be measured from a point one (1) foot plus the thickness of permanent pavement thickness below the existing pavement surface or from a point six (6) inches below the existing unpaved surface to a point one (1) foot above the pipe and as follows:
 - a. For pipe twenty-four (24) inches or less in diameter a width of five (5) feet for depths twelve (12) feet or less and a width of seven (7) feet for depths greater than twelve (12) feet.
 - b. For pipe greater than twenty-four (24) inches in diameter a width of three (3) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of five (5) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.
 3. Unsuitable material below precast concrete manholes shall be measured from a point six (6) inches below the base of the manhole to the bottom of the excavation and to a width of two (2) feet plus the outside diameter of the manhole.
 4. Unsuitable material below foundations for structures shall be measured from the bottom of foundation varying in width on a forty-five (45) degree angle down from the bottom of foundation to a depth approved by the Engineer.
- C. Payment. Payment for replacement of unsuitable material above and below trench grade and/or subgrade listed in BID FORM shall be made at the unit price bid per cubic yard under the applicable division of this Bid Item.
 1. No payment will be made for replacement of unsuitable material above trench grade when suitable excess excavated material is available from other excavations made under this Project.
 2. Bedding material placed from a point six (6) inches below the invert of pipe, to a point one (1) foot above the top of the pipe shall be included for payment under the applicable pipe laying Bid Item.
 3. When more than one (1) pipe is installed in the same trench, payment will be based on a common trench with a minimum width of seven (7) feet.
 4. No payment will be made for unsuitable material replaced beyond the limits approved by the Engineer.

ITEM 10. EXPERIMENTAL EXCAVATION

- A. General. The price bid under this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include notification of utility owners, machine and/or hand excavation to locate utilities, backfill, compaction, maintaining utility marking locations, repair to utilities damaged while performing experimental excavations, temporary bituminous concrete patch, furnishing assistance to the Engineer and all other incidental Work relative thereto.

- B. Measurement. Measurement of experimental excavation shall be made based on the volume excavated and backfilled as approved by the Engineer.
- C. Payment. Payment for experimental excavation listed in BID FORM shall be made at the unit price bid per cubic yard under this Bid Item. No payment will be made for any cost associated with damages caused to existing utilities made during the performance of experimental excavation operations.

ITEM 11. FILL FOR EMBANKMENTS – Not Used

ITEM 12. SHEETING AND/OR SHORING ORDERED LEFT IN PLACE – Not Used

ITEM 13. SOILS COMPACTION TESTS

- A. General. The price bid under this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include excavation, sampling, sieve analysis, laboratory and field testing, backfill, compaction and any other incidental Work relative thereto.
- B. Measurement. Measurement of compaction testing shall be per each test as approved by the Engineer.
- C. Payment. Payment for soils compaction tests listed in BID FORM shall be made at the unit price bid per each under this Bid Item.
 - 1. For the purpose of payment, a test shall include, but not be limited to, exploratory excavation, sieve analysis, modified proctor, density test, backfill and compaction of excavations.
 - 2. No payment will be made for any test that fails to meet the specified compaction requirements.

ITEM 14. ROAD BASE COURSE MATERIAL

- A. General. The price bid under this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include transportation, preparation of sub-grade, placement, grading, compaction and any other incidental Work relative thereto.
- B. Measurement. Measurement of road base course material as a subbase for permanent resurfacing shall be based on the approved volume furnished and placed as approved by the Engineer computed as follows:
 - 1. The length of main trench shall be defined as the length of roadway surface disturbed by the pipeline Work. The length of service trench shall be defined as the length of roadway surface disturbed by the service line Work less three (3) feet from the centerline of the main sewer or water pipeline trench.
 - 2. The width of main or service trench shall be defined as follows:

- a. For pipe twenty-four (24) inches or less in diameter a width of five (5) feet for depths of twelve (12) feet or less and a width of seven (7) feet for depths greater than twelve (12) feet.
 - b. For pipe greater than twenty-four (24) inches in diameter a width of three (3) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of five (5) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.
 3. When more than one (1) pipe is installed in the same trench, payment will be based on a common trench with a maximum width of seven (7) feet.
 4. The thickness of road base course material in local roadways shall be twelve (12) inches, unless otherwise specified or approved by the Engineer.
 5. The thickness of road base course material in State Roadways shall be equal to the thickness of the existing undisturbed road base course material adjacent to the trench.
 6. No payment will be made for road base course material when suitable excess excavated material is available from other excavations made under this Project.
- C. Payment. Payment for furnishing and placing road base course material listed in BID FORM shall be made at the unit price bid per cubic yard under this Bid Item.

ITEM 15. PAVEMENT RESTORATION

- A. General. The prices bid under each division of this Bid Item shall be considered as fair compensation for all labor, equipment, tools, and materials necessary to complete the Work as specified, which shall include, preparation of subgrade, cutting and recutting of bituminous and cement concrete pavement, reshaping of the roadway surface and/or shoulder, furnishing and placing bituminous concrete leveling course, furnishing and placing bituminous concrete, maintenance and protection of roadway surfaces, repainting of traffic control lines, cold planing bituminous concrete surfaces, infra-red heat treatment of bituminous concrete joints and all other Work incidental thereto and all other Work incidental thereto.
- B. Measurement. Measurement for pavement restoration shall be as follows:
1. Temporary Bituminous Concrete Trench Pavement.
 - a. Measurement for main trench pavement will be made based on the actual length of roadway surface disturbed by the pipeline Work. The length of service trench shall be defined as the length of roadway surface disturbed by the service line Work less three (3) feet from the centerline of the main sewer or water pipeline trench.
 - b. The maximum width of main or service trench eligible for payment shall be defined as follows:
 - (1) For pipe twenty-four (24) inches or less in diameter a width of five (5) feet for depths of twelve (12) feet or less and a width of seven (7) feet for depths greater than twelve (12) feet.

- (2) For pipe greater than twenty-four (24) inches in diameter a width of three (3) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of five (5) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.
 - c. The thickness of temporary bituminous concrete trench pavement in local roadways shall be two (2) inches or as approved by the Engineer. The thickness of temporary bituminous concrete trench pavement in state roadways shall be as specified in the road opening permit for the Project. All costs associated with meeting these requirement outside the limits described above shall be borne by the Contractor.
 2. Permanent Bituminous Concrete Trench Pavement. Measurement for main trench pavement will be made based on the actual length of roadway surface disturbed by the pipeline Work. The length of service trench shall be defined as the length of roadway surface disturbed by the service line Work less three (3) feet from the centerline of the main sewer or water pipeline trench. The maximum width of main or service trench eligible for payment shall be defined as follows:
 - a. For pipe twenty-four (24) inches or less in diameter a width of seven (7) feet for depths of twelve (12) feet or less and a width of nine (9) feet for depths greater than twelve (12) feet.
 - b. For pipe greater than twenty-four (24) inches in diameter a width of five (5) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of seven (7) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.
 - c. The thickness of permanent bituminous concrete trench pavement in local roadways shall be equal to the thickness of the existing undisturbed surface adjacent to the trench or four (4) inches, whichever is greater or as approved by the Engineer.
 3. Measurement of width for permanent bituminous concrete pavement for trenches with more than one (1) pipe laid in the same trench shall be treated as a common trench with a maximum trench width of nine (9) feet, unless otherwise approved by the Engineer.
 4. Permanent Bituminous Concrete Overlay Pavement. Measurement for permanent bituminous concrete overlay pavement will be made based on the actual length and width of roadway overlaid as approved by the Engineer. The thickness of permanent bituminous concrete overlay pavement in local roadways shall be equal to two (2) inches or as approved by the Engineer.
 5. Miscellaneous Bituminous Concrete. Measurement for miscellaneous bituminous concrete placed where directed by the Engineer shall be by the ton based on certified weight slips delivered daily to the Engineer.
- C. Payment. Payment for pavement restoration listed in BID FORM shall be made under the applicable divisions of this Bid Item.
 1. The factor of 0.055 tons per square yard per inch of thickness shall be used for weight-volume conversions for bituminous concrete.

2. Certified weight slips for all bituminous concrete delivered to the site(s) and certified volume slips for all controlled density fill delivered to the site(s) shall be submitted to the Engineer on a daily basis.
3. Payment for furnishing and placing permanent bituminous concrete pavement shall be made at the unit price bid per ton computed using one of the following methods:
 - a. Method 1 (Measured in Place): The Engineer shall multiply the pavement area by the specified pavement thickness by the factor to obtain the tonnage of bituminous concrete.
 - b. Method 2 (Delivered): Certified weight slips shall be used. Any bituminous concrete placed outside the payment limits, unless approved by the Engineer, shall be deducted (using Method 1) from the total tonnage obtained from the certified weight slips.
 - c. Payment for furnishing and placing temporary and permanent bituminous concrete will be made based on the number of tons obtained using either Method 1 or Method 2, whichever is less.
4. No additional payment will be made beyond the payment limits noted or for maintenance or repair of trenches.
5. Payment for joint sealant and/or tack coat shall be included under the applicable division of this Bid Item for bituminous concrete Work.
6. Payment for adjusting frames and covers, valve boxes and all other castings prior to placement of permanent bituminous concrete pavement shall be included under the applicable division of this Bid Item for bituminous concrete Work.
7. Payment for reshaping of roadways and/or road shoulders, roadway reclamation, regrading and compaction of roadway base course materials and or providing leveling course over settled trenches shall be included under the applicable division of this Bid Item for bituminous concrete Work.
8. Payment for miscellaneous bituminous concrete whether placed by machine or by hand, for leveling of existing roadways, driveway aprons, sidewalks, and other areas outside the trench limits will be made at the unit price bid per ton.

ITEM 16. REMOVE AND RELAY OR REPLACE EXISTING UTILITIES

- A. General. The prices bid under each division of this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified which shall include transportation, handling and dispersal of materials, removal and legal disposal of excess materials, furnishing and installation of new replacement materials (including but not limited to pipe and accessories, couplings, fittings, manholes and catch basins), excavation (excluding that which is specified to be paid for separately), backfill above trench grade including all bedding materials (excluding material used to replace unsuitable material and road base course material), compacting trenches, sheeting and shoring not ordered left in place, testing (excluding soil compaction tests specified to be paid for separately), daily cleanup, restoration of all areas disturbed by the Contractor's operations that are not included for payment under another Bid Item, and all other incidental Work relative thereto.

- B. Measurement. Measurement for removal and relaying or replacing existing utilities shall be as follows:
1. Measurement for the removal and relaying or replacement of existing water, sewer and/or storm drain pipelines and appurtenances, within the allowable trench width only, will be made by multiplying the inside diameter of the relaid or replaced pipeline by the length of relaid or replaced pipeline. For measurement purposes, the allowable trench width will be defined as follows:
 - a. For pipe twenty-four (24) inches or less in diameter a width of five (5) feet for depths twelve (12) feet or less and a width of seven (7) feet for depths greater than twelve (12) feet.
 - b. For pipe greater than twenty-four (24) inches in diameter a width of three (3) feet plus the inside diameter of the pipe for depths of twelve (12) feet or less and a width of five (5) feet plus the inside diameter of the pipe for depths greater than twelve (12) feet.
 2. Measurement for removal and resetting or replacement of manholes and catch basins will be made by multiplying the inside diameter of the manhole or catch basins by its height.
- C. Payment. Payment for the removal and relaying or replacement of existing water, sewer and/or storm drain pipelines and appurtenances listed in BID FORM shall be made at the unit prices bid per inch-foot under the applicable divisions of this Bid Item.
1. Payment will only be made for the removal and relaying or replacement of existing water, sewer and/or storm drain pipelines and appurtenances when (1) such utilities are removed and relaid or replaced as a result of conflicts in elevation with the grade of the new pipelines or (2) the length of such existing utilities within the allowable trench width that cross above the new pipeline is greater than two and one-half (2.5) times the width of the allowable trench limit or (3) such utilities lie completely within the allowable trench width and the existing utility invert is a minimum of two (2) feet above the crown of the new pipeline as approved by the Engineer.
 2. No payment will be made for the removal and relaying or replacement of utilities other than water mains, sewer mains, force mains or storm drains.
 3. No payment will be made for the removal and relaying or replacement of utilities which lie either partially or completely beyond the allowable trench width.
 4. Payment for removal and resetting or replacement of manholes and catch basins shall include resetting frames and covers or grates.

ITEM 17. UNIFORMED TRAFFIC POLICE OFFICERS

- A. General. Payment for the services of uniformed police officers shall be made at the prevailing rates of pay for special duty details in effect at the time of services, for each permanent, special or reserve officer and for graduated rank. Uniformed police officers shall be paid directly by the Owner. The Contractor is responsible for coordination of the police details. Refer to GENERAL INFORMATION.

ITEM 18. ENGINEER'S FIELD OFFICE

- A. General. The prices bid under each division of Item 18 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to furnish, install maintain and remove the Engineer's Field Office as specified, including all other incidental Work relative thereto. The Engineer shall notify the Contractor when the Engineer's Field Office is to be removed from the site.
- B. Measurement. Measurement for furnishing, installing, maintaining and removing the Engineer's Field Office shall be as follows:
1. Measurement for payment for furnishing, installing and subsequent removal of the Engineer's Field Office shall be for one (1) complete and acceptable unit as approved by the Engineer.
 2. Measurement for payment for maintaining the Engineer's Field Office shall be per week as approved by the Engineer.
- C. Payment. Payment for furnishing, installing, maintaining and subsequent removal of the Engineer's Field Office listed in BID FORM shall be made at the lump sum and unit prices bid under the applicable divisions of Item 18.
1. Payment for furnishing, installing and removal of the Engineer's Field Office shall be made at the lump sum price bid under the applicable division of Item 18. The lump sum price bid shall include transporting, mobilization, demobilization, utility connection fees, permits, licenses, insurance, and all other labor, materials, and equipment required to furnish the Engineer's Field Office as specified. An amount of seventy-five (75) percent of the amount bid (exclusive of normal contract retainage) will be made when the Engineer's Field Office is ready for occupancy and use on the Project. The remaining twenty-five (25) percent (exclusive of normal contract retainage) will be made following the removal of the Engineer's Field Office from the Project.
 2. Payment for maintaining the Engineer's Field Office shall be made at the unit price bid per week under the applicable division of Item 18. Maintaining the Engineer's Field Office shall include all maintenance, rental fees, utility charges, sanitary fees, equipment rental charges, and all other costs related to the weekly operation of the Engineer's Field Office. Payment will be made for those periods of time that the Engineer has directed the Contractor to provide the Engineer's Field Office. No payment will be made for the Engineer's Field Office that was not requested by the Engineer, or that remained on the Project after the Engineer notified the Contractor to remove it.
 3. The Owner reserves the right to delete from the Work any or all divisions of Item 18 without penalty.
 4. No payment shall be made once the Contractor's time for completion has been reached.

ITEM 19. ENVIRONMENTAL PROTECTION

- A. General. The prices bid under each division of this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include furnishing, installing, maintaining and removing sedimentation control barriers and structures and all other incidental Work relative thereto.
- B. Measurement. Measurement for Environmental Protection shall be as follows:

1. Measurement for furnishing, placing, maintaining, and removal of sedimentation barriers shall be per linear foot of measured length of in-place barrier as approved by the Engineer.
 2. Measurement for furnishing, placing, maintaining, and removal of sedimentation control structures shall be per each as approved by the Engineer.
- C. Payment. Payment for Environmental Protection listed in BID FORM shall be made under the applicable divisions of this Bid Item as follows:
1. Payment for sedimentation control barriers shall be made at the unit price bid per linear foot.
 2. Payment for sedimentation control structures shall be made of the unit price bid per each approved installation.
 3. No additional payment will be made for maintaining or replacing sedimentation barriers or control structures during the course of the Work.

ITEM 20. DEWATERING

- A. General. The price bid under this Bid Item shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified which shall include Work performed by the Contractor, Contractor's Subcontractor(s) or Consultants, design, permits, installation, operation, maintenance and removal of the dewatering system (including but not limited to pumps, well points, header pipes and approved discharge point preparation and restoration), legal disposal of all water discharged during the operation of the dewatering system, restoration of all areas disturbed by the Contractor's operations and all other incidental Work relative thereto.
- B. Measurement. Measurement for dewatering shall be by the linear foot of pipe trench dewatered as approved by the Engineer.
- C. Payment. Payment for dewatering listed in BID FORM shall be made at the linear foot price bid under this Bid Item and as follows:
1. No payment will be made for dewatering systems utilized within the limit of the trench excavation.

ITEM 21. SAMOSET STREET SEWER SYSTEM EXPANSION PUMP STATION

- A. General. The prices bid under each division of Item 21 shall be considered as fair compensation for all labor, equipment, tools, and materials necessary to complete the Work, as specified, located within the limit of Work shown for the construction of the pumping station on the Contract Drawings. This shall include all Work performed by the Contractor, Subcontractor(s) or Contractor's Consultant(s) for the construction of a complete pumping station including installation of planting materials, utility company coordination, and all other incidental Work relative thereto. No other payment Item will be used for compensation of Work performed within the limit of work line shown on the Contract Drawings for Item 21.
- B. Measurement

1. Measurement for pumping station construction shall be made based on a percentage of the total lump sum amount bid under Item 21, as approved by the Engineer.
 2. Measurement for utility charge allowance(s) shall be based on the actual paid invoices by the Contractor to each utility company. The following utility allowances shall be included in each subdivision of Item 21: Planting Materials at \$15,000; Electrical at \$20,000; Telephone at \$7,500; and Gas at \$20,000.
- C. Payment. Payment for pumping station construction listed in BID FORM shall be made at the lump sum price bid or actual utility cost incurred under the applicable division of Item 21.
1. Payment for pumping station construction shall be made as follows: An amount of 60 percent of Item 21 (exclusive of normal contract retainage) shall be made when the pumping station is completely constructed which includes all site and utilities Work. The remaining 40 percent (exclusive of normal contract retainage) shall be made following acceptance of the pumping station by the Owner, including startup and testing, training of Owner personnel, delivery and approval of Operation and Maintenance Manual(s) and receipt by Owner of all specified spare parts.
 2. Payment for planting materials and utility companies' charges shall be made based on the actual charges paid to each utility by the Contractor. An amount of 100 percent of each paid invoice (no retainage) will be made to the Contractor based on paid invoice receipts.

ITEM 22. GRISSOM ROAD PUMP CHAMBER

- A. General. The prices bid under each division of Item 22 shall be considered as fair compensation for all labor, equipment, tools, and materials necessary to complete the Work, as specified, located within the limit of Work shown for the construction of the pump chamber on the Contract Drawings. This shall include all Work performed by the Contractor, Subcontractor(s) or Contractor's Consultant(s) for the construction of a complete pump chamber and all other incidental Work relative thereto.
- B. Measurement
1. Measurement for pump chamber construction shall be made based on a percentage of the total lump sum amount bid under Item 22, as approved by the Engineer.
- C. Payment. Payment for furnishing and installing precast concrete manholes listed in BID FORM shall be made at the unit prices bid under the applicable divisions of this Bid Item.
1. Only seventy-five (75) percent of the price bid for each structure shall be paid for upon its installation, the balance shall be withheld until such time as the structure has been successfully tested and accepted by the Owner. This percentage is exclusive of normal Contract retainage.

PART 2 PRODUCTS – Not Applicable

PART 3 EXECUTION – Not Applicable

END OF SECTION